

Shg Nam IF

Work Order ID 84273

\*84273\*

Page 1

May-08-12 3:58:24 PM

Item ID: D4545-044 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: Retainer, Inner, RH (Side)  
Start Date: 08/05/2012 Start Qty: 2.00 \*2\* Cust Item ID:  
Required Date: 22/05/2012 Req'd Qty: 2.00 \*2\* Customer:  
Reference:

Approvals: Process Plan: MLJ Date: 12/05/08 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
Run Start \*NR1\*  
Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D4545	<u>FC</u> <u>MS</u>								

100	Pick Kit	0.00							
*100*						3			FF
Packaging	Memo	0.00							12-05-15
Packaging									

110		0.00							
*110*						3	3		<u>2/05/14</u>
Small Fab	Memo	0.00							
Small Fab	1- ASSEMBLE AND BEND TABS AS PER DWG								
	2- DISASSEMBLE AND DEBURR								
	3- DIMPLE HOLES AS PER DWG								

Shg Nam IF

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 84273

**\*84273\***

Page 2

Item ID: D4545-044

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Retainer, Inner, RH (Side)

Start Date: 08/05/2012 Start Qty: 2.00

**\*2\***

Cust Item ID:

Required Date: 22/05/2012 Req'd Qty: 2.00

**\*2\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 <b>*120*</b> QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00				(3)			120514
130 <b>*130*</b> HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00				30	0		M ul os 60
140 <b>*140*</b> QC Quality Control	QC7-Inspect Chemical Conversion Coat  Memo	0.00  0.00				3	0		BL 12.5-H.

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
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 Required Date: 22/05/2012 Req'd Qty: 2.00 **\*2\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
145		0.00							
<b>*145*</b>						3	0		FF 12-05-15
Small Fab	Memo	0.00							
Small Fab	INSTALL NUT PLATES AND ASSEMBLE AS PER DWG								
147	QC5- Inspect part completeness to step on W/O	0.00							
<b>*147*</b>									
QC	Memo	0.00							
Quality Control									
190	Identify as per dwg & Stock Location	0.00							
<b>*190*</b>									
Packaging	Memo	0.00							
Packaging									

3x SP  
12-05-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC21- Final Inspection - Work Order Release	0.00							
<b>*200*</b>									
QC	Memo	0.00							
Quality Control									

12/5/17  
 MCT 12/05/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



# Picklist Print

May-08-12 3:58:27 PM

Page 1

Work Order ID: 84273

**\*84273\***

Parent Item: D4545-044

**\*D4545-044\***

Parent Item Name: Retainer, Inner, RH (Side)

Start Date: 08/05/2012

Required Date: 22/05/2012

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 12.01.13 new issue DD verf:JLM  
REV:B 12.02.27 AS PER DWG REV.B DD VERF:EC  
12.05.08 as per dwg revC DD verf:EC  
IPP REV:C

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4541-3 Manufactured No

100 Each 4.0000 1 2

**\*D4541-3\***

Bracket

\*\*

③ FF 12-05-15

Location

Loc Qty

Loc Code

FG

2

B 84404

3

78276

2

GA

2

81262

2

D4542-3 Manufactured No

100 Each 5.0000 1 2

**\*D4542-3\***

Retainer, Inner

\*\*

③ FF 12-05-15

Location

Loc Qty

Loc Code

FG

2

B 84403

3

78280

2

GA

3

81267

3

MS20426AD3-4 Purchased No

145 Each 3,280.000 28 56

**\*MS20426AD3-4\***

RIVET

\*\*

③ FF 12-05-15

Location

Loc Qty

Loc Code

ST316

3280

104374

614

110398

2666

84

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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May-08-12 3:58:27 PM

Page 2

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**\*84273\***

Parent Item: D4545-044

**\*D4545-044\***

Parent Item Name: Retainer, Inner, RH (Side)

Start Date: 08/05/2012

Required Date: 22/05/2012

Start Qty: 2.00

Required Qty: 2.00

MS21059L3K

Purchased

No

145

Each

314.0000

14

28

**\*MS21059L 3K\***

\*\*

③ FF 12-05-15

Nutplate

Location

Loc Qty

Loc Code

ST302

314

121114

314

42

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

ITEM	QTY -041	QTY -042	QTY -043	QTY -044	QTY -045	QTY -046	QTY -047	QTY -048	PART NUMBER	DESCRIPTION
	X								D4545-041	RETAINER, LH INNER (LOWER)
		X							D4545-042	RETAINER, RH INNER (LOWER)
			X						D4545-043	RETAINER, LH INNER (SIDE)
				X					D4545-044	RETAINER, RH INNER (SIDE)
					X				D4545-045	RETAINER, LH INNER (TOP CORNER)
						X			D4545-046	RETAINER, RH INNER (TOP CORNER)
							X		D4545-047	RETAINER, LH INNER (TOP)
								X	D4545-048	RETAINER, RH INNER (TOP)
1	1								D4541-1	BRACKET
2		1							D4541-2	BRACKET
3			1	1					D4541-3	BRACKET
4					1	1			D4541-5F	BRACKET
5							1	1	D4541-7	BRACKET
6	1								D4542-1	RETAINER
7		1							D4542-2	RETAINER
8			1	1					D4542-3	RETAINER
9					1	1			D4542-5	RETAINER
10							1	1	D4542-7	RETAINER
11	40	38	28	28	12	12	16	16	MS20426AD3-4	RIVET
12	19	18	14	14	6	6	8	8	MS21059L3K	NUTPLATE
13	1	1							MS21061L3K	NUTPLATE

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 04273 MLJ  
12/05/08

RELEASED  
2012-05-07  
MP

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: AFTER FORMING AND PRIOR TO ASSEMBLY, CHEMICAL CONVERSION COAT D4541-X & D4542-X PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N & B/N PER DART QSI 044 6.1
- 7) WEIGHT: -041/-042 = 0.38 lbs, -043/-044 = 0.27 lbs,  
-045/-046 = 0.11 lbs, -047/-048 = 0.15 lbs
- 8) BEND INDIVIDUAL TABS ON D4541-X BRACKETS TO CORRESPONDING "A#" (A1, A2, ETC.,) VALUE

C	CHG FINISH (ZN A8-1); D4541-5F WAS -5 (C4-1) REMOVE TRANSFER DRILL NOTES	CP	12.04.20
B	ADD FINISH (ZN A8-1)	CP	12.02.01
A	NEW ISSUE	CP	12.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.04.20		

**DART AEROSPACE LTD**  
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D4545  
TITLE RETAINER, INNER  
REV. C  
SHEET 1 OF 9  
SCALE  
NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

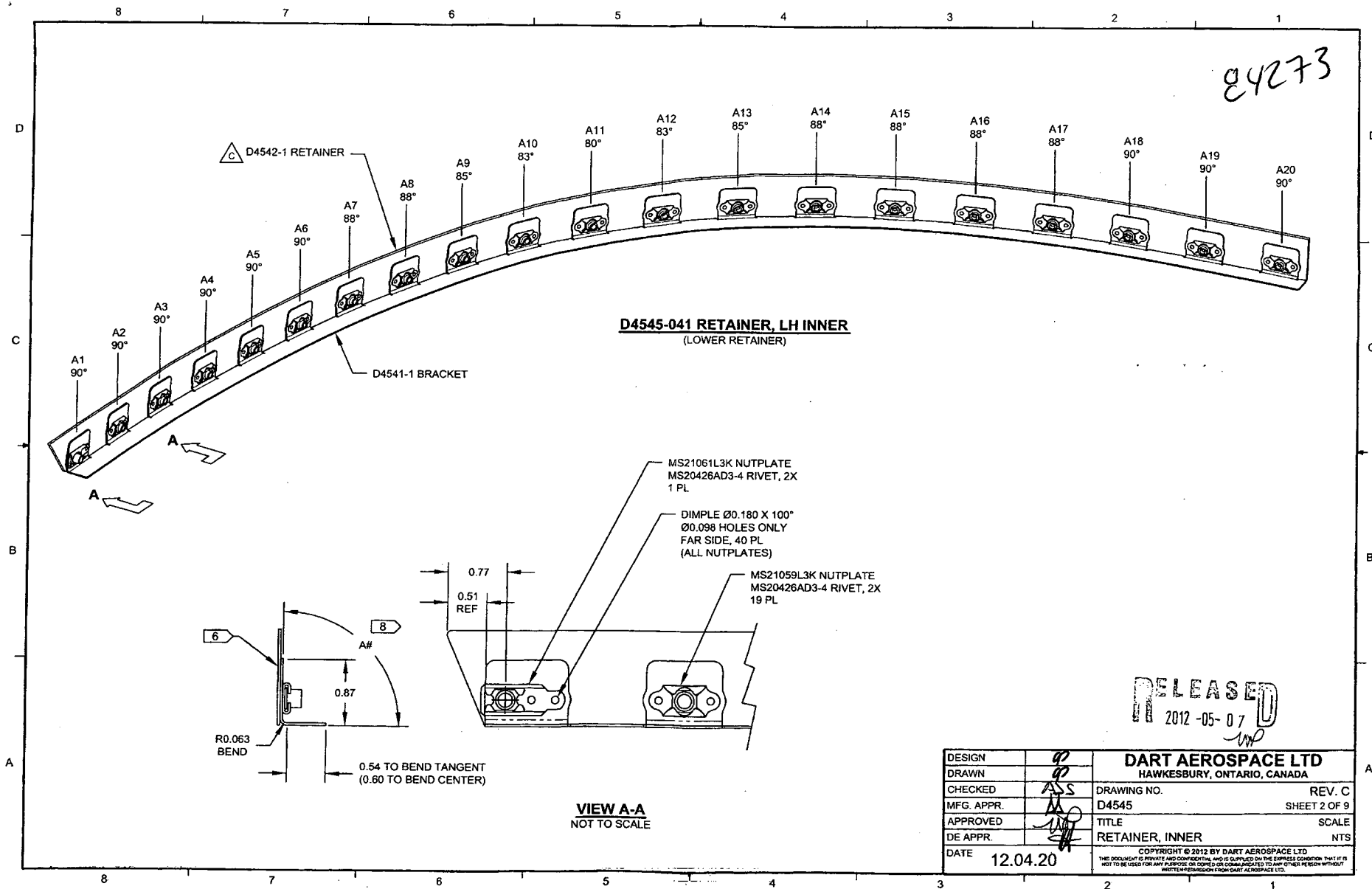
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

84273



**Dart Aerospace Ltd**

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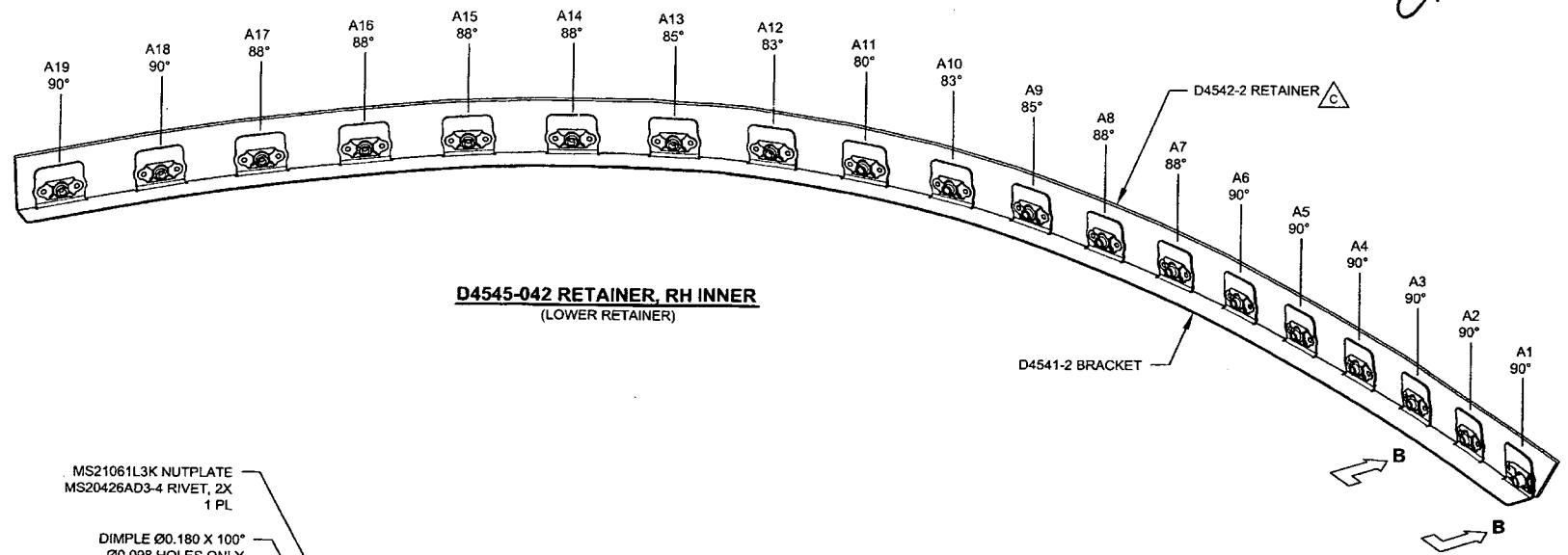
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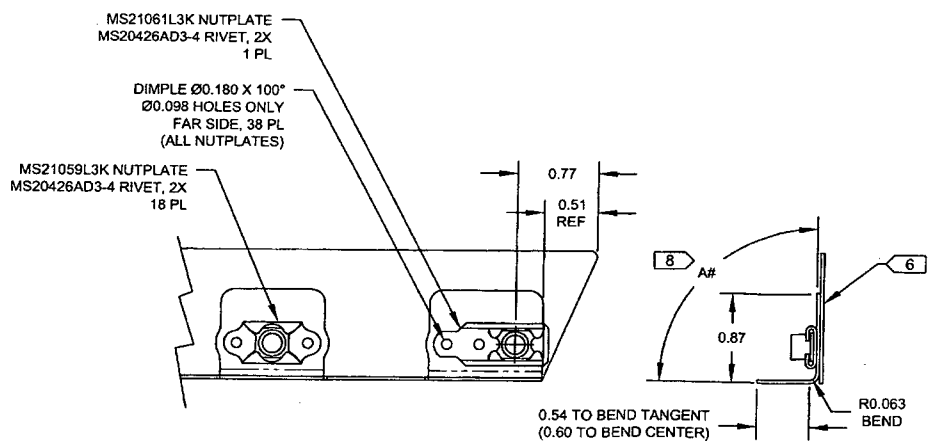
**NOTE:** Date & initial all entries



84273



**D4545-042 RETAINER, RH INNER**  
(LOWER RETAINER)



**VIEW B-B**  
NOT TO SCALE

2012-05-07

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. C
MFG. APPR.		D4545	SHEET 3 OF 9
APPROVED		TITLE	SCALE
DE APPR.		RETAINER, INNER	NTS
DATE	12.04.20	<small>COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

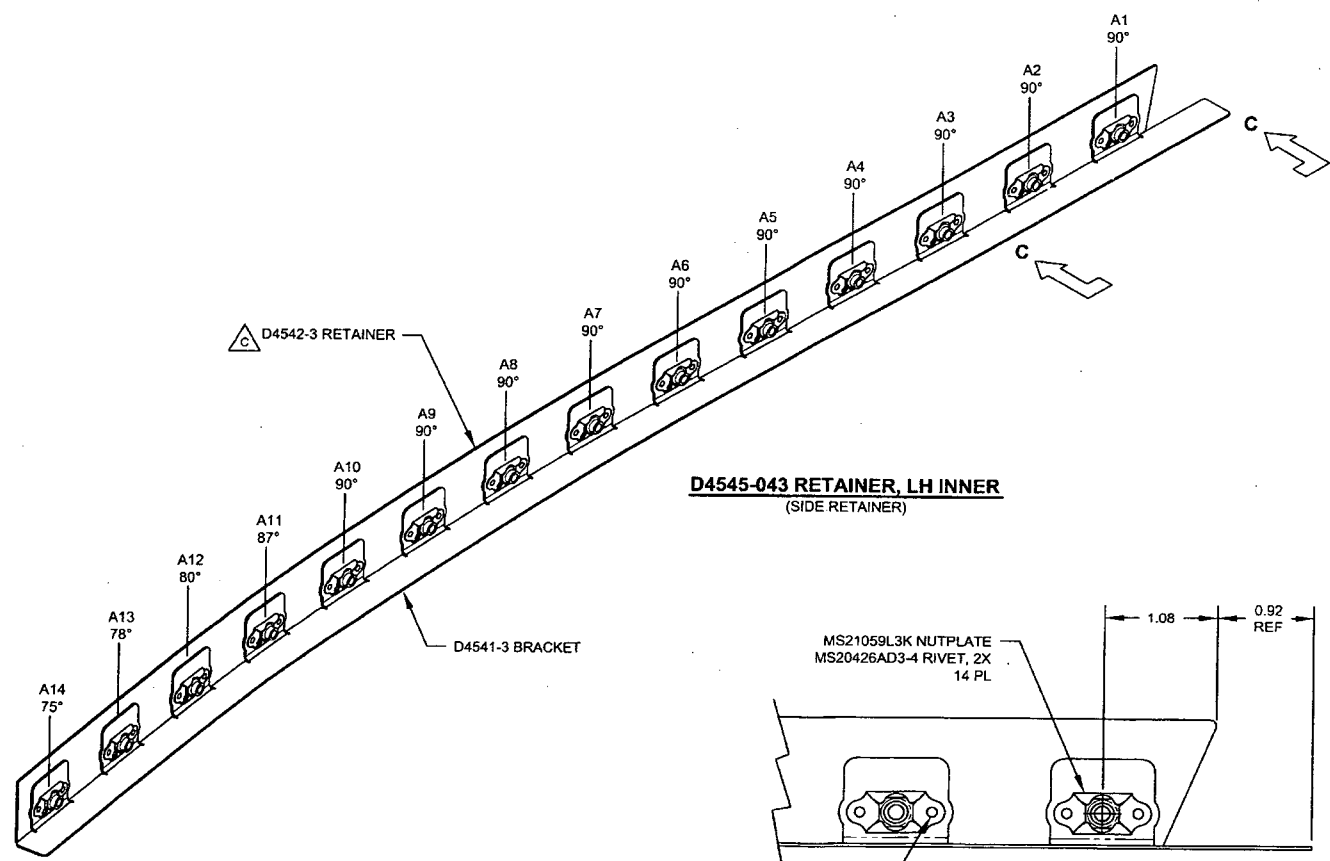
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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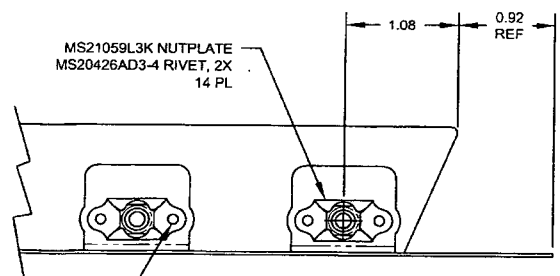
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84273

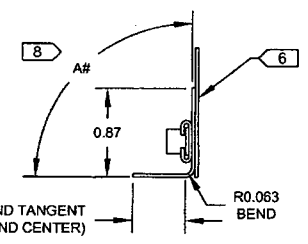


**D4545-043 RETAINER, LH INNER**  
(SIDE RETAINER)

DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 28 PL



**VIEW C-C**  
NOT TO SCALE



DESIGN	90	<b>DART AEROSPACE LTD</b>	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. C
MFG. APPR.	MP	D4545	SHEET 4 OF 9
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# Dart Aerospace Ltd

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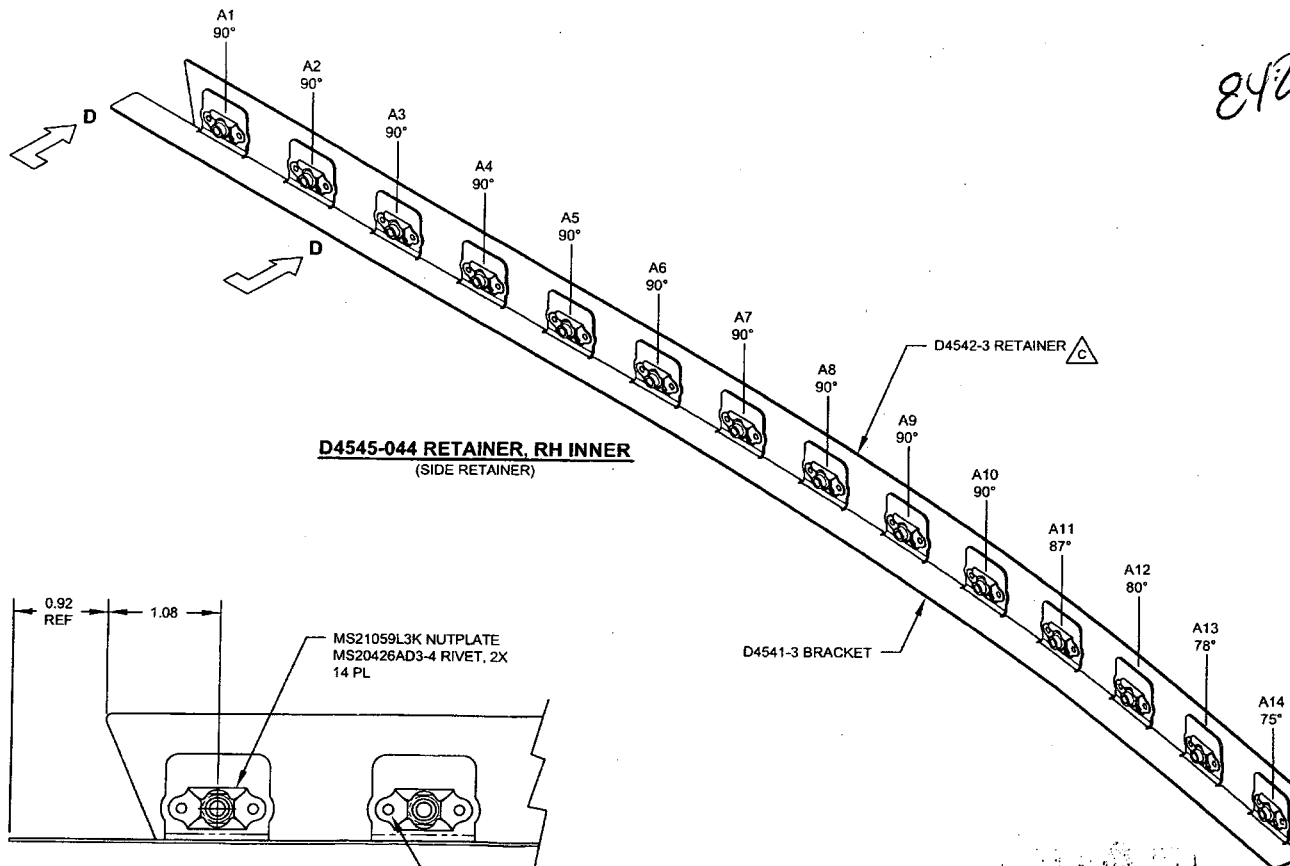
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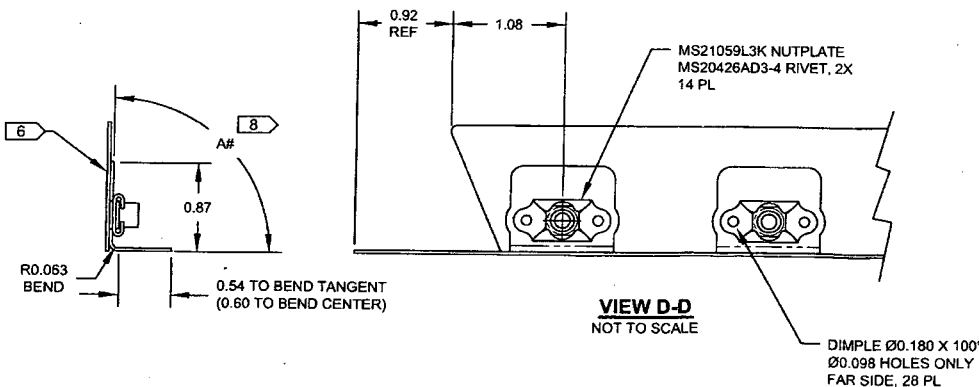
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**NOTE:** Date & initial all entries

84273



**D4545-044 RETAINER, RH INNER**  
(SIDE RETAINER)



**VIEW D-D**  
NOT TO SCALE

2012-05-07

DESIGN	90	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	90		
CHECKED	ASS	DRAWING NO.	REV. C
MFG. APPR.	MA	D4545	SHEET 5 OF 9
APPROVED	MA	TITLE	SCALE
DE APPR.	MA	RETAINER, INNER	NTS
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**Dart Aerospace Ltd**

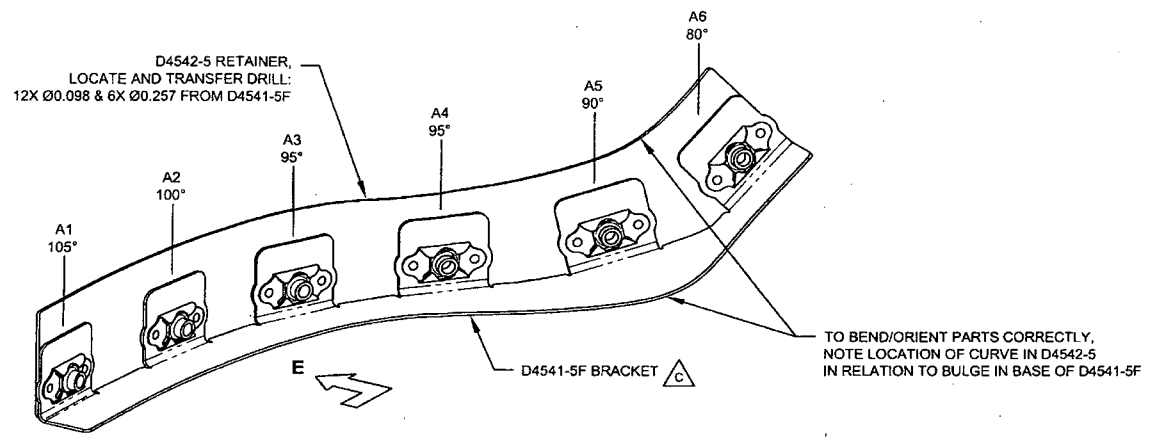
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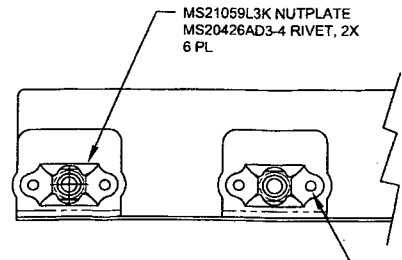
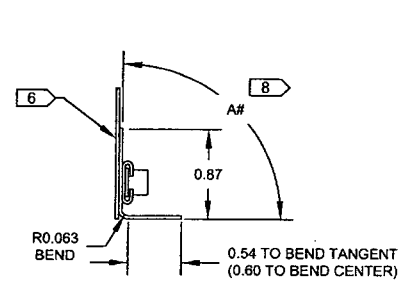
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**D4545-045 RETAINER, LH INNER**  
(TOP CORNER RETAINER)



2012-03-07

DESIGN	98	<b>DART AEROSPACE LTD</b>	
DRAWN	98	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. C
MFG. APPR.	AS	D4545	SHEET 6 OF 9
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

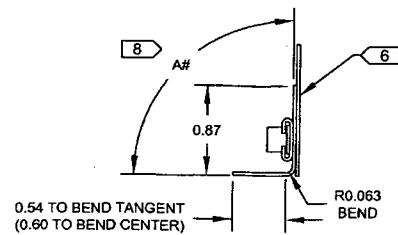
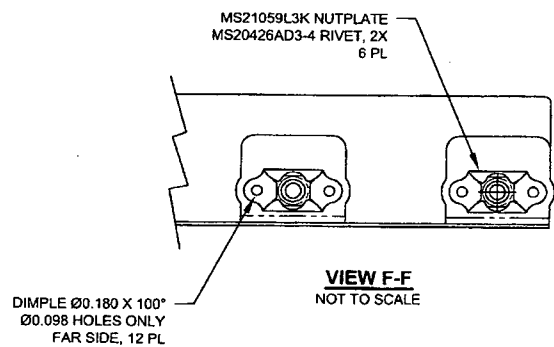
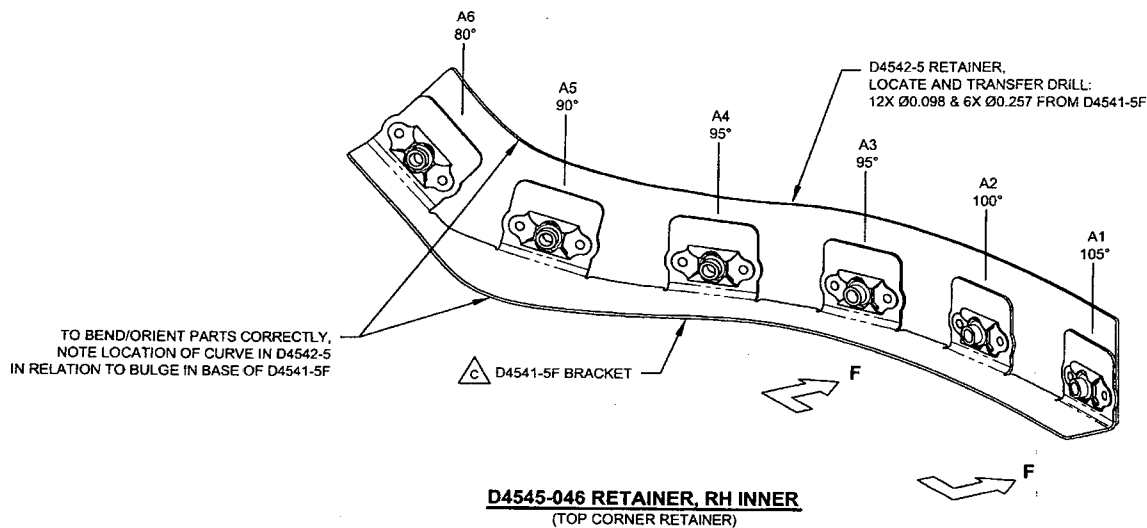
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



24273



RELEASED  
2012-05-07  
MP

DESIGN	DP	<b>DART AEROSPACE LTD</b>	
DRAWN	DP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. C
MFG. APPR.	MA	D4545	SHEET 7 OF 9
APPROVED	MP	TITLE	SCALE
DE APPR.	MP	RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

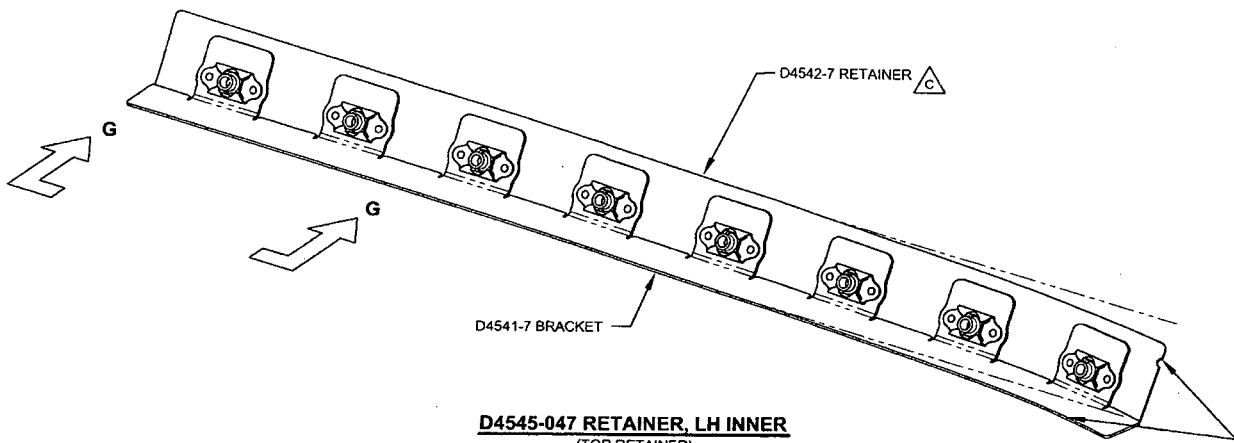
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

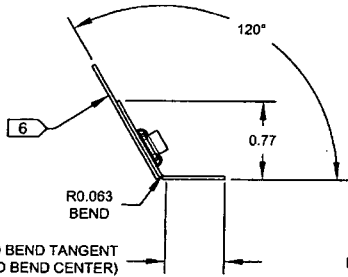
**NOTE:** Date & initial all entries

04273

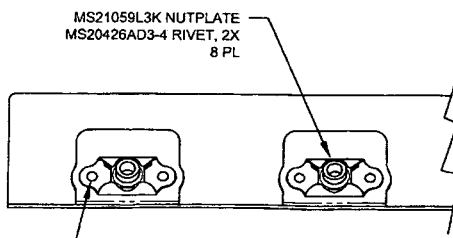


**D4545-047 RETAINER, LH INNER**  
(TOP RETAINER)

TO BEND/ORIENT PARTS CORRECTLY,  
NOTE LOCATION OF TOOLING MARK IN D4542-7  
IN RELATION TO CURVE IN BASE OF D4541-7



0.56 TO BEND TANGENT  
(0.60 TO BEND CENTER)



MS21059L3K NUTPLATE  
MS20426AD3-4 RIVET, 2X  
8 PL

**VIEW G-G**  
NOT TO SCALE

DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 16 PL

RELEASE  
2012-05-03

DESIGN	92	<b>DART AEROSPACE LTD</b>	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO. D4545	REV. C
MFG. APPR.		SHEET 8 OF 9	
APPROVED		TITLE	SCALE
DE APPR.		RETAINER, INNER	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

84273

TO BEND/ORIENT PARTS CORRECTLY,  
NOTE LOCATION OF TOOLING MARK IN D4542-7  
IN RELATION TO CURVE IN BASE OF D4541-7

△ D4542-7 RETAINER

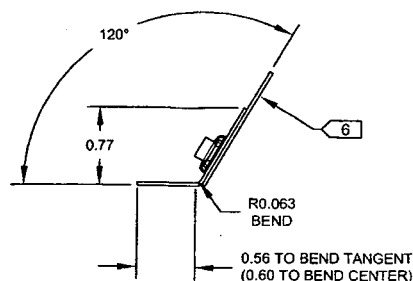
D4541-7 BRACKET

**D4545-048 RETAINER, RH INNER**  
(TOP RETAINER)

MS21059L3K NUTPLATE  
MS20426AD3-4 RIVET, 2X  
8 PL

DIMPLE Ø0.180 X 100°  
Ø0.098 HOLES ONLY  
FAR SIDE, 16 PL

**VIEW H-H**  
NOT TO SCALE



2012-05-07

DESIGN	92	<b>DART AEROSPACE LTD</b>	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. C
MFG. APPR.	AD	D4545	SHEET 9 OF 9
APPROVED	MP	TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries